UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,931	07/20/2001	Robert Olson Aberg	04899-049001	2408

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EXAMINER
RAMPURIA, SATISH

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Application No.

09/909,931

Applicant(s)

ABERG, ROBERT OLSON

Examiner

Satish S. Rampuria

Art Unit

2124

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the application filed on 07/20/2001.

2.   Claims 1-21 are pending.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this

title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a

whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No.

4,901,221 to Kodosky et al., hereinafter called Kodosky, in view of US Patent No.

5,627,979 to Chang et al., hereinafter called Chang.

Per claims 1-5 and 17:

Kodosky disclose:

-   A method of block diagram modeling in a data processing system (col. 3, lines 50-51

    "The present invention provides a system for modelling a process" and col. 3, line 54

    "an editor for displaying at least one diagram"), comprising:

-   in a first block, receiving a first value indicative of an index into a lookup table (col. 3,

    lines 61-63 "an execution subsystem for assigning respective values for the one or more

    input variables");

- in the first block, generating information indicative of the location of the first value

  relative to a predefined domain of possible indexed values that define regions (col. 8,

  lines 58-59 "graphical representations of input controls and output indicators are stored

  in a memory library" also fig. 5 and related description);

- in a second block, receiving the information generated by the first block (col. 13, lines

  29-30 "output data are available for transmission to a next system" also fig. 18 and

  related description); and

- using the information received in the second block to determine an output value of a first

  lookup table (col. 13, lines 49-51 "constructing a visual display in which at least one

  input variable produces at least output variable according to a displayed procedure").

Kodosky does not explicitly disclose lookup table and index.

However, Chang discloses in an analogous computer system a table is provided to access

the information stored in using various types of indexes, record identifiers, link fields and

pointers (col. 3, lines 39-50 "data model... provides fixed-length records composed of data

fields of various types, indexes, record identifiers and link fields, and pointer structures" and

col. 4, lines 19-21 "A table may contain as many foreign keys as links it requires to relate it to

other tables with which it has relationships").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to incorporate the method of using lookup table and indexes as taught

by Chang into the method of block diagram data processing as taught by Kodosky. The

modification would be obvious because of one of ordinary skill in the art would be motivated to

use the lookup table to map or access the information as suggested by Chang (col. 5, lines 1-
10).

Per claims 16 and 18:

The rejection of claims 1 and 17 are incorporated, and further, Kodosky disclose:

- using the graphical block diagram of the graphical block diagram model as a

    specification for interpretation by automatic code generation software that generates

    code to perform computations equivalent to computations performed by the graphical

    block diagram model (col. 35, lines 57-67 section, Code Generation "Once the data store

    schema is mapped to the object schema, the user may use code generators 410 or 420 to

    generate data access methods for each object interface... the user may have created

    classes MyEmp and MyDept, created tables EMP and DEPT, and mapped MyEmp to

    EMP and MyDept to DEPT..." also fig. 5 and related discussion)

Claim 20 is the computer program product claim corresponding to method claim 1 and rejected

under the same rational set forth in connection with the rejection of claim 1 above.

Claim 21 is the system claim corresponding to method claim 1 and rejected under the same

rational set forth in connection with the rejection of claim 1 above.

5.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kodosky and

        Chang in view of admitted prior art.

Per claims 6, 7, and 15:

The rejection of claim 1 is incorporated, and further, Kodosky disclose:

- receiving a value indicative of an index into the lookup table and corresponding to a

  different one of N dimensions (col. 3, lines 61-63 "an execution subsystem for assigning

  respective values for the one or more input variables");

- generating information indicative of the location of such value relative to the predefined

  domain of possible index values (col. 8, lines 58-59 "graphical representations of input

  controls and output indicators are stored in a memory library" also fig. 5 and related

  description); and

- in the second block, receiving the information generated by each of the N index search

  blocks (col. 13, lines 29-30 "output data are available for transmission to a next system"

  also fig. 18 and related description); and

- using the information received in the second block to determine an output value of the

  first lookup table (col. 13, lines 49-51 "constructing a visual display in which at least one

  input variable produces at least output variable according to a displayed procedure").

Kodosky does not explicitly disclose N index search block.

However, admitted prior art discloses N index search block (Applicant's specification,

page 1, lines 25-26 "One type of block supported by such tools is an n-dimensional interpolation

block that performs an index search operation and interpolated table lookup").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to incorporate the method of including the N index search block as

taught in admitted prior art into the method of block diagram data processing as taught by the combination system by Kodosky and Chang. The modification would be obvious because of one of ordinary skill in the art would be motivated to include N index search block to perform index search operation.

Per claims 8 and 14:

The rejection of claim 1 is incorporated, and further, neither Kodosky nor Chang disclose maintaining in a block library a pre-lookup index search block and an interpolation block that uses output of the pre-lookup index search block for interpolated table lookup; and instantiating the index search block to create the first block and instantiating the interpolation block to create the second block.

However, admitted prior art discloses maintaining in a block library a pre-lookup index search block and an interpolation block that uses output of the pre-lookup index search block for interpolated table lookup (Applicant's specification, page 1, lines 10-12 "Such blocks may be placed in a reference library to define a graphical class. Graphical libraries are similar to system software libraries in that they are a repository of classes" and page 1, lines 25-26 "One type of block supported by such tools is an n-dimensional interpolation block that performs an index search operation and interpolated table lookup"); and instantiating the index search block to create the first block and instantiating the interpolation block to create the second block (Applicant's specification, page 1, lines 13-14 "When a graphical class is used in a model, it is said to be instantiated, i.e., an instance of the graphical class is created for use in the model")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to incorporate the method of maintaining in a block library and

instantiating the index search block as taught in admitted prior art into the method of block

diagram data processing as taught in the combination system by Kodosky and Chang. The

modification would be obvious because of one of ordinary skill in the art would be motivated to

maintain a block library and instantiating the index search block to provide efficiently perform

the system.

Per claim 9:

The rejection of claim 8 is incorporated, and further, neither Kodosky nor Chang disclose

receiving parameters from a user to instantiate the pre-lookup index search block and the

interpolation block.

However, admitted prior art discloses receiving parameters from a user to instantiate the

pre-lookup index search block and the interpolation block (Applicant's specification, page 1,

lines 16-17 "Parameters are class member data that are specified when a user constructs a new

instance of a class").

The feature of receiving parameter from user to instantiate would be obvious for the

reasons set forth in the rejection of claim 8.

Per claims 10 and 13:

The rejection of claim 9 is incorporated, and further, neither Kodosky nor Chang disclose

receiving comprises providing the user with a dialog box having fields for specifying values of

the parameters for the pre-lookup index search block.

However, admitted prior art discloses receiving comprises providing the user with a

dialog box having fields for specifying values of the parameters for the pre-lookup index search

block (Applicant's specification, page 1, lines 18-20 "On a graphical user interface (or "GUI"),

such parameter specification interfaces take the form of a dialog box with various parameter

entry fields").

The feature of receiving parameter from user via dialog box would be obvious for the

reasons set forth in the rejection of claim 8.

Per claim 11:

The rejection of claim 9 is incorporated, and further, neither Kodosky nor admitted prior art

disclose receiving comprises providing the user with a textual API for programmatically

specifying values of the parameters.

However, Chang discloses in an analogous computer system receiving comprises

providing the user with a textual API for programmatically specifying values of the parameters

(col. 8, lines 36-39 "To accomplish this object manipulation through data store access, the

Smart Access graphical user interface 310 calls an object-oriented application programing

interface (API), Object Call Level Interface, OCLI, 320").

The feature of using API to specify parameter value would be obvious for the reasons set

forth in the rejection of claim 8.

Per claim 12:

The rejection of claim 10 is incorporated, and further, neither Kodosky nor Chang

disclose the parameters for the pre-lookup index search block comprise breakpoint data.

However, admitted prior art discloses wherein the parameters for the pre-lookup index

search block comprise breakpoint data (Applicant's specification, page 1, line 27 "breakpoint

data sets have to perform identical index search operations")

The feature of search block comprise breakpoint data would be obvious for the reasons

set forth in the rejection of claim 8.

Per claim 19:

Neither Kodosky nor Chang disclose maintaining in a block library an index search block and

an interpolation block that uses output of one or more pre-lookup index search blocks; and

enabling a user to use the pre-lookup index search and interpolation blocks to build a graphical

block diagram model.

However, admitted prior art discloses maintaining in a block library an index search

block and an interpolation block that uses output of one or more pre-lookup index search blocks

(Applicant's specification, page 1, lines 10-12 "Such blocks may be placed in a reference

library to define a graphical class. Graphical libraries are similar to system software libraries in

that they are a repository of classes" and page 1, lines 25-26 "One type of block supported by

such tools is an n-dimensional interpolation block that performs an index search operation and

interpolated table lookup"); and enabling a user to use the pre-lookup index search and

interpolation blocks to build a graphical block diagram model ock (Applicant's specification,

page 1, lines 13-14 "When a graphical class is used in a model, it is said to be instantiated, i.e.,

an instance of the graphical class is created for use in the model")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to incorporate the method of maintaining in a block library and

instantiating the index search block as taught in admitted prior art into the method of block

diagram data processing as taught in the combination system by Kodosky and Chang. The

modification would be obvious because of one of ordinary skill in the art would be motivated to

maintain a block library and instantiating the index search block to provide efficiently perform

the system.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

The following patent is cited to further show the state of the art with respect to

calculation in block diagram software.

US Patent No. 5,612,866 to Savanyo et al.

US Patent No. 4,796,179 to Lehman et al.

US Patent No. 6,173,208 to Park et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satish S. Rampuria whose telephone number is 703-305-8891. The examiner can normally be reached on 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Satish S. Rampuria

Patent Examiner

Art Unit 2124

07/12/2004

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